



# Adding Ratios

## Student Activity

Name \_\_\_\_\_

Class \_\_\_\_\_

In these activities you will use graphical representations to show the sum of ratios and to compare the sum of two ratios. After completing each activity, discuss and/or present your findings to the rest of the class.



### Activity 1 [Page 1.3]

1. Set one ratio at 1.5:5. Find a second ratio such that the sum of the two ratios determines a point on the specified line. Explain your reasoning in each case.
  - a. line determined by 1.5:5
  
  
  
  
  
  
  
  
  
  
  - b. line with slope 2
  
  
  
  
  
  
  
  
  
  
  - c. line  $y = x$
  
2. Given the ratio: 4.5:2, find another ratio so that the sum of the two ratios is not between the lines associated with each ratio.



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3. Consider two ratios: 2:7 and 3:8. (Note that you may want to use the TNS files from your work with past lessons- connecting ratios to graphs and proportions to support your thinking for these questions.)
- Which ratio produces a steeper line? Show how you found your answer.
  - Given two ratios, how can you tell which will be associated with a steeper line? Explain your reasoning and use the TNS lesson to give an example that supports your thinking.
4. Make a conjecture about when the line  $y = x$  bisects the lines formed by the two ratios,  $a:b$  and  $c:d$ .



### Activity 2 [Page 2.2]

1. Display both sets of segments on page 2.2. Explain which is steeper in each case.
  - a. the blue segment representing the ratio 33:11 or the pink one representing the ratio 8:1
  
  
  
  
  
  
  
  
  
  
  - b. the blue segment representing the ratio 3:11 or the pink one representing the ratio 5:6
  
  
  
  
  
  
  
  
  
  
  - c. the blue segment representing the sum of the blue ratios or the pink segment representing the sum of the pink ratios
  
  
  
  
  
  
  
  
  
  
  - d. Does your answer to part c seem reasonable? Why or why not?
  
  
  
  
  
  
  
  
  
  
2. Refer back to the grid on page 2.2. Change the point representing the ratio 5:6 to a point representing the ratio 20:24. Explain which is steeper in each case:
  - a. the blue segment representing the ratio 33:11 or the pink one representing the ratio 8:1



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- b. the blue segment representing the ratio 3:11 or the pink one representing the ratio 20:24
- c. the blue segment representing the sum of the blue ratios or the pink segment representing the sum of the pink ratios
- d. Does your answer to part c seem reasonable? Why or why not?